

REMARKS

Claims 1-5, 7-17 and 19-27 are pending in this application. Claims 1, 4, 12, and 27 are the independent claim. By this Amendment, claims 6 and 18 are cancelled without prejudice or disclaimer. Claims 1-4, 7, 12-17, 19, 20, 22-24 and 27 are amended. No new matter is added.

Allowable Subject Matter

Claims 13, 14, 25 and 26 are indicated as being allowable if rewritten in independent form. Claim 15 is indicated as being allowable if amended to overcome the rejection under 35 USC §112, second paragraph. As claim 15 is amended to overcome the rejection, the subject matter of claim 15 is allowable. The remaining pending claims are in condition for allowance for the reasons discussed below.

Objections to the Specification

The abstract is objected to for containing legal phraseology. As the abstract is replaced by the Substitute Abstract attached hereto which does not include legal phraseology, withdrawal of the objection is respectfully requested.

The specification is objected to for not containing section headings. Although section headings are not required (37 CFR §1.77), headings are added to aid the Examiner in examination of the present application.

Claim Objections

Claims 22 and 23 are objected to due to the recitation of the phrase “in particular.” As the claims are amended to overcome the objection by deleting the phrase, withdrawal of the objection is respectfully requested.

Rejections Under 35 U.S.C. §112

Claims 2, 3, 7, 15-18 are rejected under 35 U.S.C. §112, second paragraph, for allegedly being indefinite. Specifically, claims 2, 3, 7, 17 and 18 are rejected due to the recitation of the phrase “grain proportions.” Claim 15 is objected to due to the recitation of the word “small.” Claim 15 is rejected for the recitation of the phrases “at least one further element” and “another element.”

As claim 18 is cancelled, the rejection of that claim is moot. Claims 2, 3, 7, and 17 are amended to remove the recitation of proportion to clarify the claim language. Claim 15 is amended to remove the recitation of the word “small” and to clarify the word “element” as used in the claim.

Accordingly, withdrawal of the rejection is respectfully requested.

Rejections Under 35 U.S.C. §103

Claims 1, 4-6, 8-12, 19-24 and 27 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,805,298 to Corbett. The rejection is respectfully traversed.

Corbett relates to preformed cementitious thermal heating panel that, once formed and installed on the floor of room to be heated, receives hydronic pipe in grooves in the panel. During manufacture, the panel is cast, pressed or extruded and grooves are molded or extruded into wet Portland cement, for example, that forms the panel. During installation, a panel which can retain a pipe in the formed groove is installed on a floor by nailing, screwing or adhering the panel to the floor. Thus, once the panel is installed, a hydronic pipe is installed in the groove and the panel and pipe are covered by a flooring material, such as tile.

As Corbett only discloses a process of forming the cementitious panel having grooves, Corbett fails to disclose or suggest the claimed process of producing a heat exchanger element including a fibrous mat where a layer of a cast coating is applied to a fibrous mat, a heat exchanging conduit is laid onto the fibrous mat and the cast coating, and curing the cast coating to form a cast mass. Rather, in Corbett, the panel is formed, cured and delivered to a location for installation without a heat exchanger element (hydronic pipe).

Moreover, although Corbett indicates that “additional layers of backing materials” may be added to the cementitious panels, there is no disclosure of the thickness of such “additional layers.” Corbett only discloses that the panel thickness must be sufficient to accommodate the hydronic pipe. For example, a panel thickness of 5/8” (15.9mm) is required to accommodate a pipe diameter of 3/8” and for stability of the panel. Thus, Corbett fails to disclose or suggest a applying a fibrous mat having a thickness of at least 25mm and a cast coating layer of 2-8mm.

Although the Examiner recognizes that Corbett fails to disclose any of the particular cast coating layer thicknesses or the particular grain size ranges or particular sizes of the heat exchanger conduits as recited in the pending claims, it is alleged that absent an indication of unexpected results due to these features, that the features are not inventive.

Applicants respectfully point out to the Examiner that the specification is replete with advantages and unexpected results due to the cast coating thickness, grain size ranges, etc., recited in the rejected claims. For example, as discussed at page 7, lines 20-35, a panel formed by the claimed method and having the structural features of the claimed panel, will be lighter than existing panels, have better heat transfer characteristics and be more easily mounted on a wall or ceiling. In contrast, the panel of Corbett is heavy (made of Portland cement) and is disclosed as being mounted only on a floor due to its weight. Other disclosed advantages of the claimed method and panel include increased sound insulating characteristics (see page 8, lines 18-25, for example) and easy interconnectivity of the heat exchanger elements of the panels.

As Corbett fails to disclose or suggest all of the features recited in the rejected claims, withdrawal of the rejection is respectfully requested.

CONCLUSION

In view of the above remarks and amendments, the Applicant respectfully submits that each of the pending objections and rejections has been addressed and overcome, placing the present application in condition for allowance. A notice to that effect is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to contact the undersigned.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact John W. Fitzpatrick, at the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

HARNESS, DICKEY & PIERCE, P.L.C.

By: 

John W. Fitzpatrick, Reg. No. 41,018

P.O. Box 8910
Reston, Virginia 20195
(703) 668-8000

DJD/JWF/kas